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| **Key Topics and Learning Sequence** | | | | | | | |
| **= First Steps** | | **= Moving On** | | **= Stretch** | | **= Challenge** | |
| 1. **Labelling triangles**      1. Identify a **right triangle.** 2. **Label** the sides of a triangle correctly using **opposite**, **adjacent** and **hypotenuse.** 3. You understand the notation **abc** and **ABC** in a triangle. | 1. **Trigonometric Ratios** 2. Know the three **trigonometric ratios and understand them as scale factors in similar triangles** 3. You can **use a table** to find an angle given any given ratio 4. You can find the **ratio** between **two sides** with a given angle using a **table** 5. Understand that there is a **fixed relationship** between the **sides** of a **right-angle** triangle 6. Find a **ratio** from a **calculator** | | 1. **Finding missing sides** 2. Can form an **equation** involving **two sides** and a correct **ratio** 3. Can find a **missing side** when the **unknown** is on the **numerator.** 4. Can find a **missing side**   when the **unknown** is in the **denominator.**   1. Can find a **missing side** in **3D** 2. Can find a **missing side** in a **non-right angle triangle** | | 1. **Finding missing angles** 2. Can form an **equation** involving the **two sides** and the **missing angle** 3. Can find a **missing angle** by using the **inverse function** on the **calculator** 4. You know the **exact** trigonometric ratios for **0, °30°, 45°, 60°,90°.** | | **5. Trigonometry in context**   1. Apply **similarity** to find a missing **side/angle** 2. Use/draw **diagrams** from context 3. Find a missing **side/angle** in context. 4. Find the **area of a triangle** using trig**.** 5. Solve problems which require the application of **trigonometry and Pythagoras** |
| **How does this unit fit into your mathematical learning journey?** | | | | **Further Exploration, Enrichment and Cultural Capital** | | | |
| You have been learning about **triangles, angles, and ratios** separately in different units from **Year 7-9.** In **Year 9** you also learnt about the special properties of **similar shapes** and **Pythagoras’ theorem** which is applied to **right angled triangles**. In this unit we combine these ideas together and learn about the **special ratios** between similar triangles. | | | | **Enrichment:** Explore the **trigonometric graphs** of sine, cosine and tangent using <https://www.desmos.com/calculator>. Test your trigonometry vocabulary knowledge with this quiz <https://www.helpfulgames.com/subjects/mathematics/256-trigonometry-vocabulary.html> or try to beat the computer in this trig ratio race http://thewessens.net/ClassroomApps/Main/trigrace.html?topic=geometry&id=8 **Cultural Capital:** Make a clinometer <https://brainchase.com/build-clinometer/>, then pop outside and measure the height of anything you want following the easy guide here <https://www.instructables.com/Using-a-clinometer-to-measure-height/> | | | |

**LPS Mathematics: Year 10 – Unit 9 Trigonometry**

**Enquiry Question: How can we measure the height of a tree without climbing it?**

**Date: Initial Thoughts:**

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**Date: New Thoughts:**

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**Date: Final Thoughts:**

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